EPA REGIONAL/STATE/TRIBAL WORKSHOP ON ENVIRONMENTAL INDICATORS **5/17-21/2004**

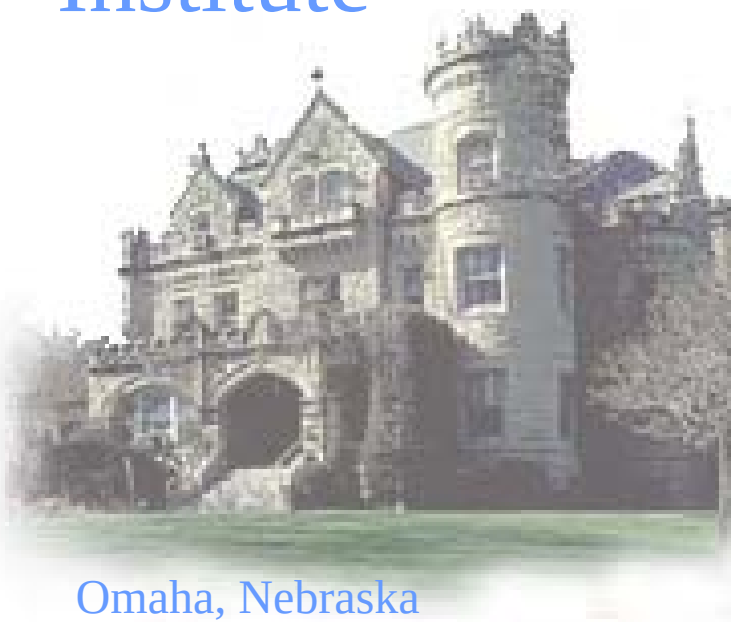
Indicators at the Local and Regional Levels: A help or a hindrance??

Joslyn Castle Institute

for sustainable communities

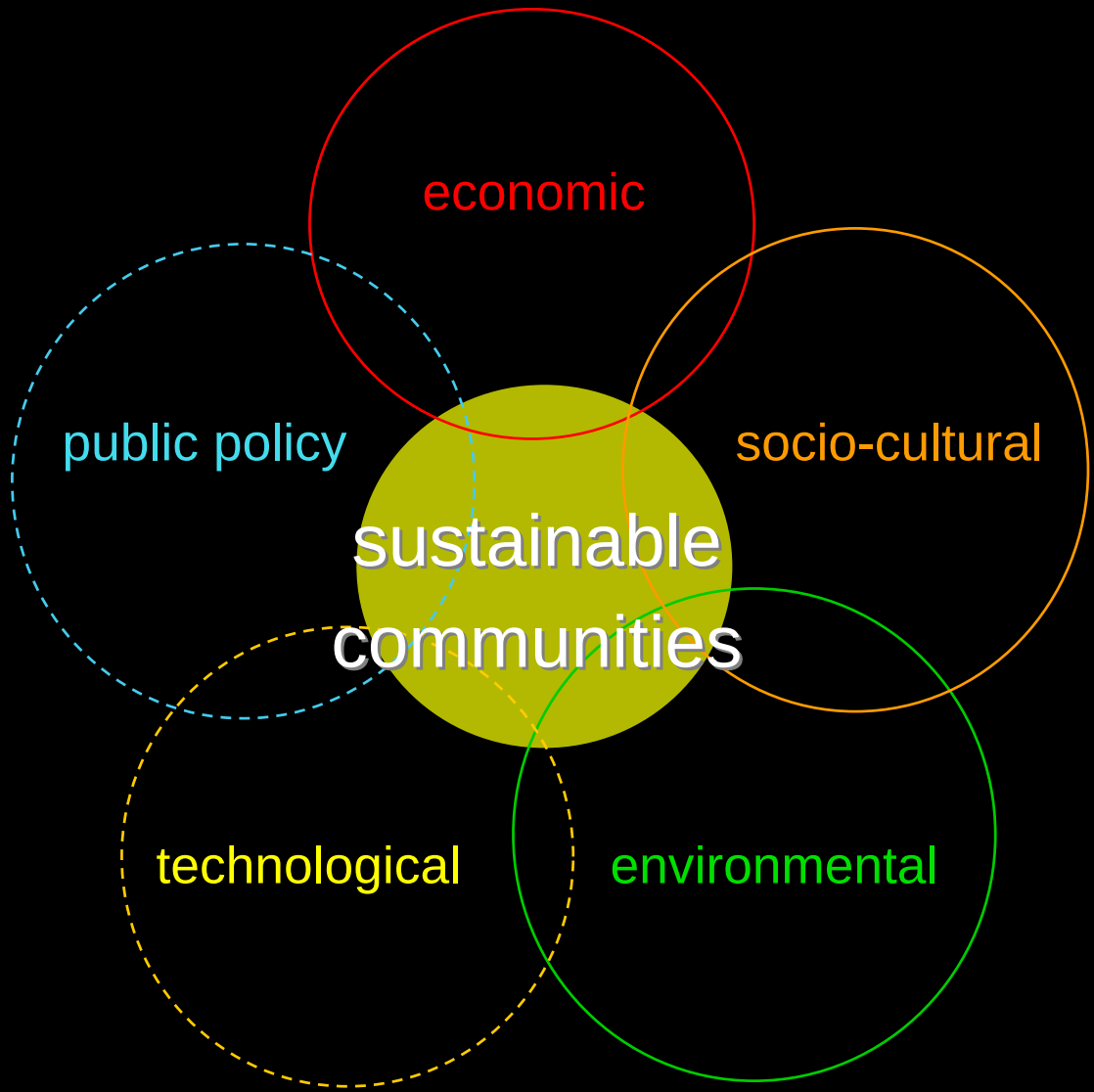
JCI's Mission

Joslyn Castle Institute



Omaha, Nebraska

- **Education for sustainability**
- **Facilitate capacity for interdependent problem solving**
- **Provide forums to encourage participation in the development process**
- **Initiate community visioning**
- **Demonstrate sustainability principles on a project-by-project basis**
- **Cultivate community leadership**

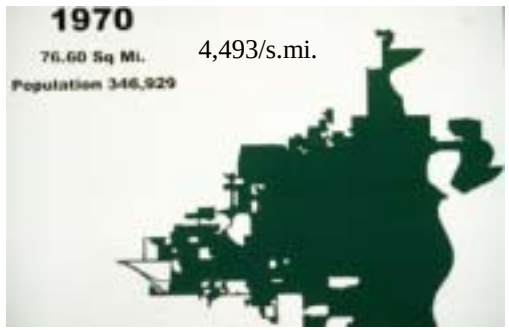


The *Five* Domains of Sustainable Development

4023/s.mi.

5,631/s.mi.

6,468/s.mi.



4,493/s.mi.

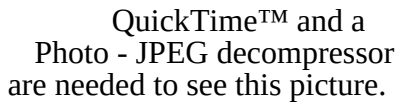
3,123/s.mi.

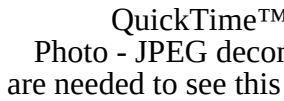
Low-density Growth

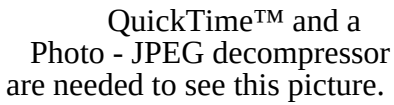
Omaha 1885-1997

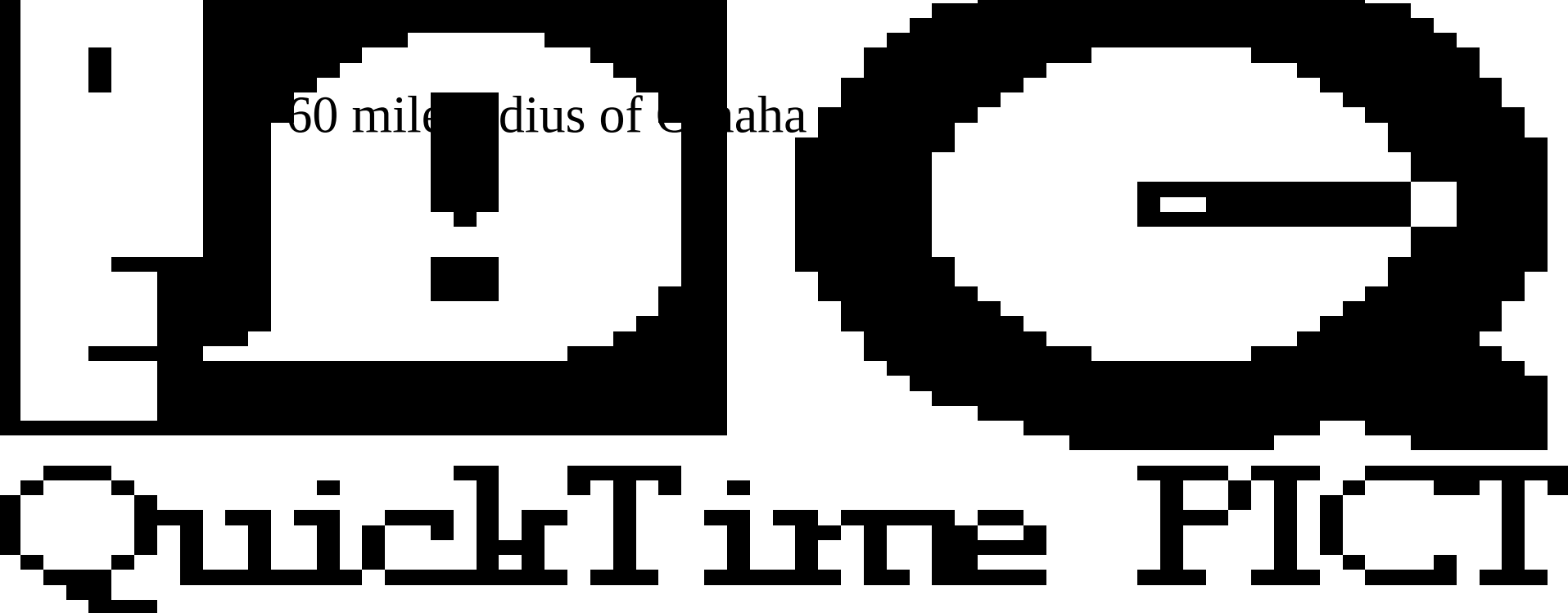
QuickTime PICT

QuickTime PICT


QuickTime™ and a
Photo - JPEG decompressor
are needed to see this picture.


QuickTime™ and a
Photo - JPEG decompressor
are needed to see this picture.

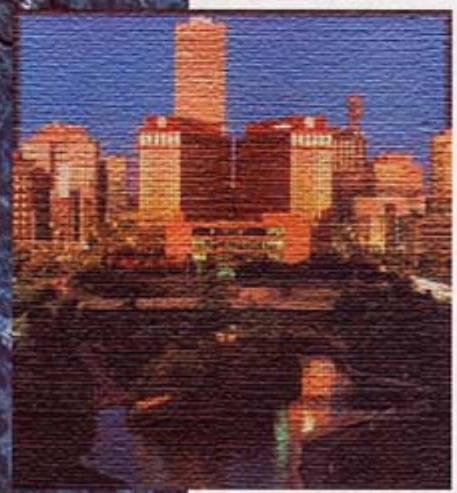

QuickTime™ and a
Photo - JPEG decompressor
are needed to see this picture.


60 mile dius of aha
QuickTime PICT


60 m
of Lincoln
QuickTime PICT

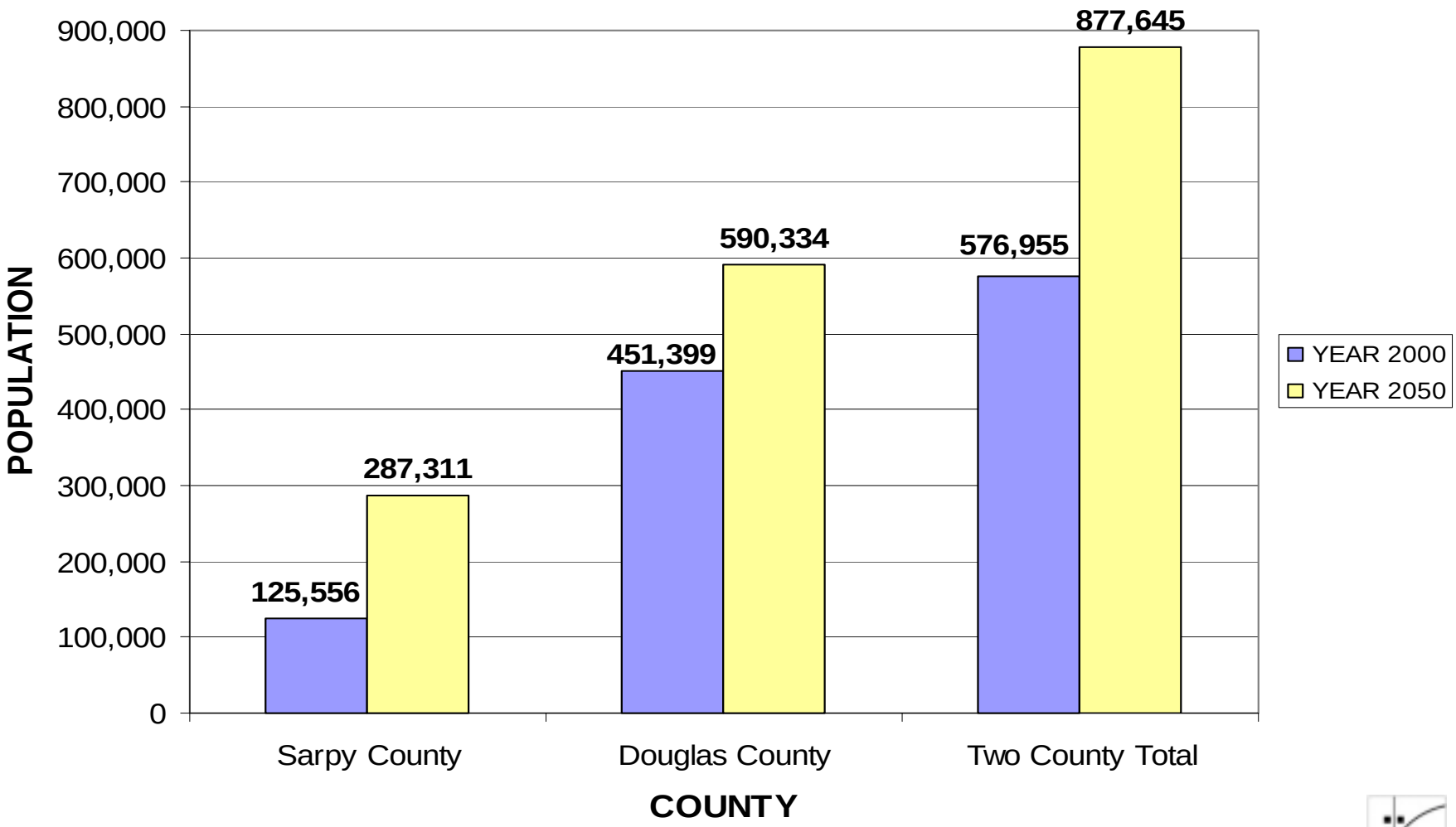
Omaha Area Projections to 2050

June 1999

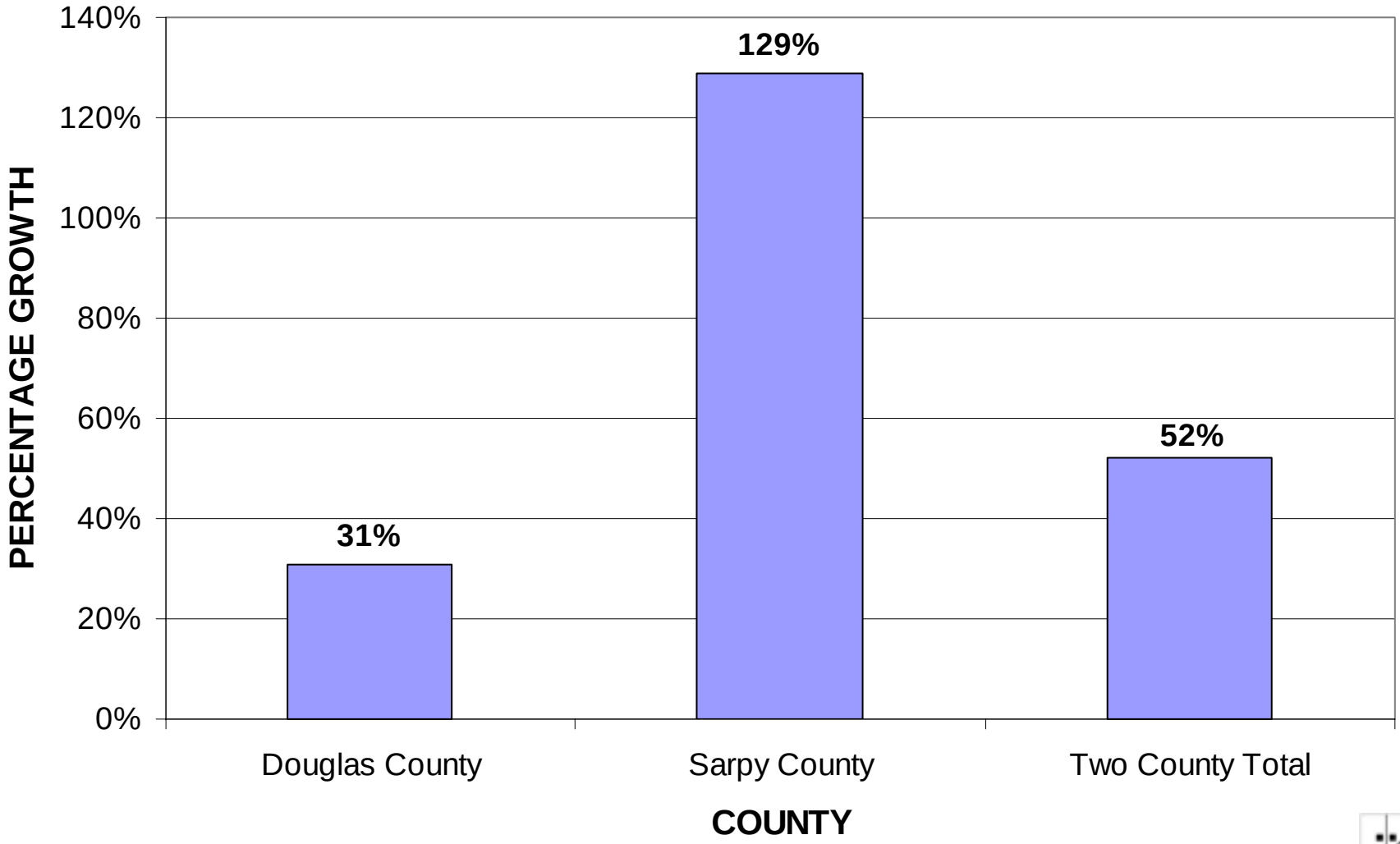


Bureau of Business Research
University of Nebraska-Lincoln

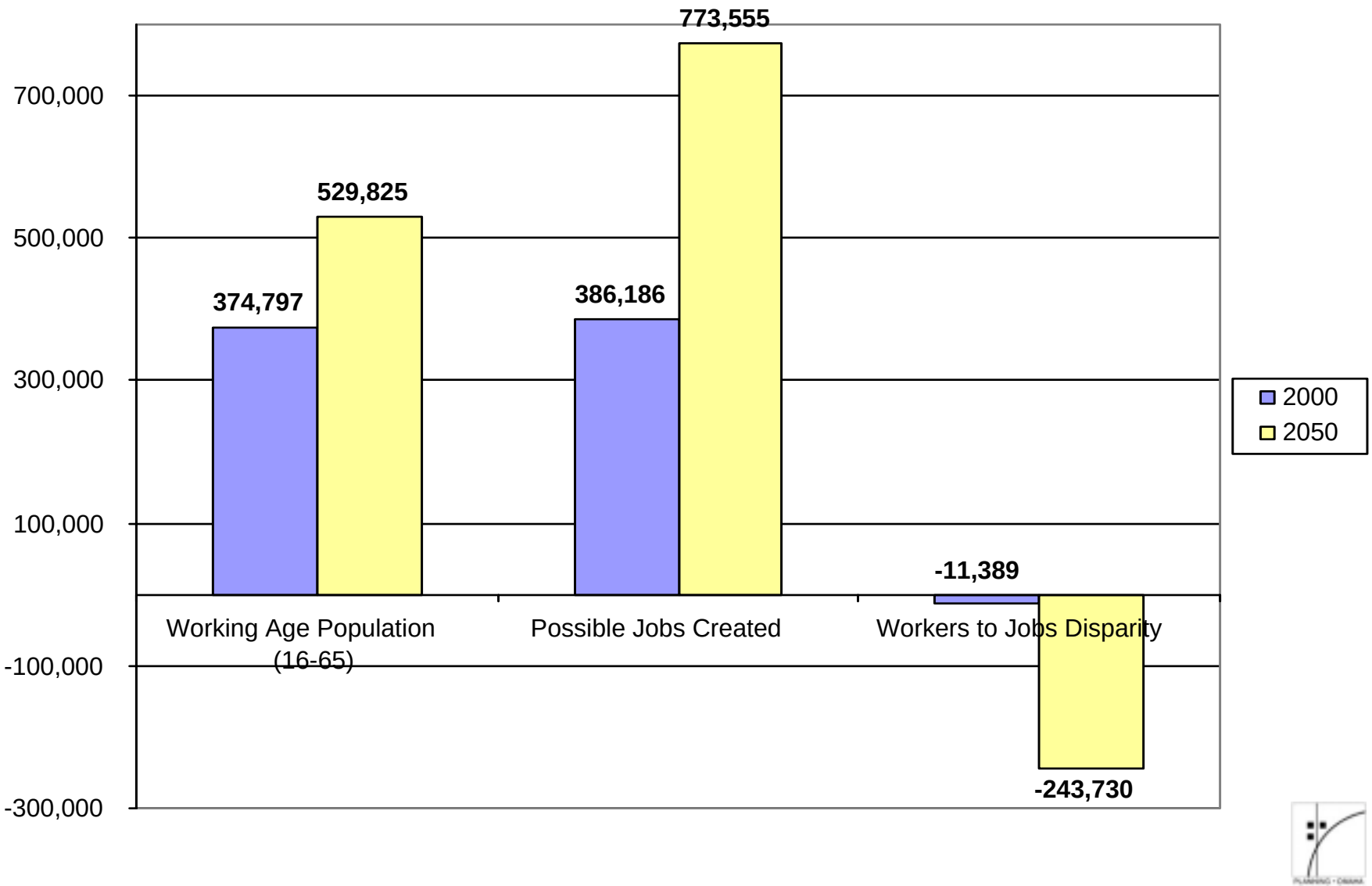
DOUGLAS AND SARPY COUNTY
POPULATION GROWTH 2000-2050



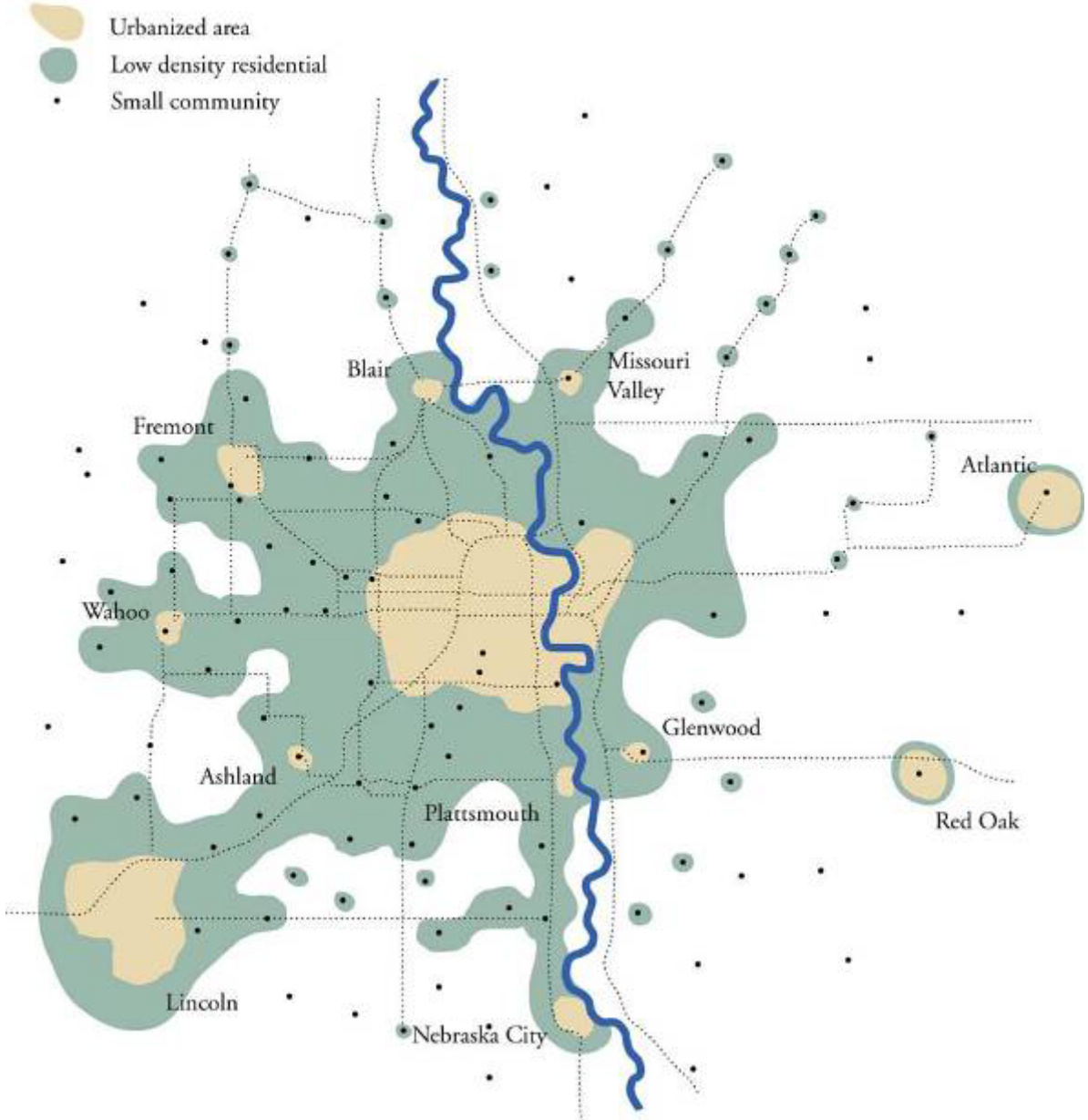
PERCENTAGE GROWTH IN POPULATION BY COUNTY



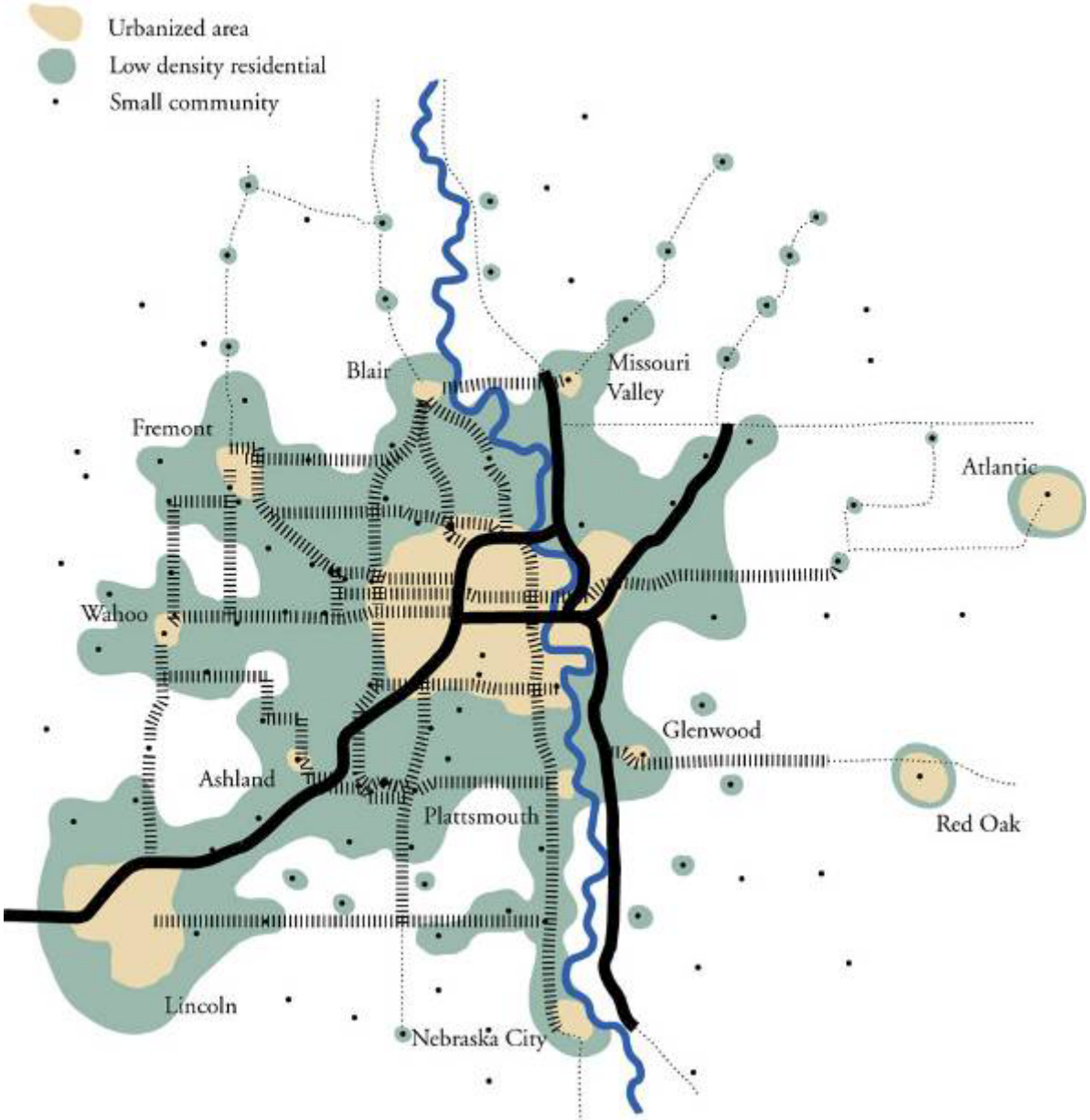
PROJECTED WORKERS TO JOBS DISPARITY



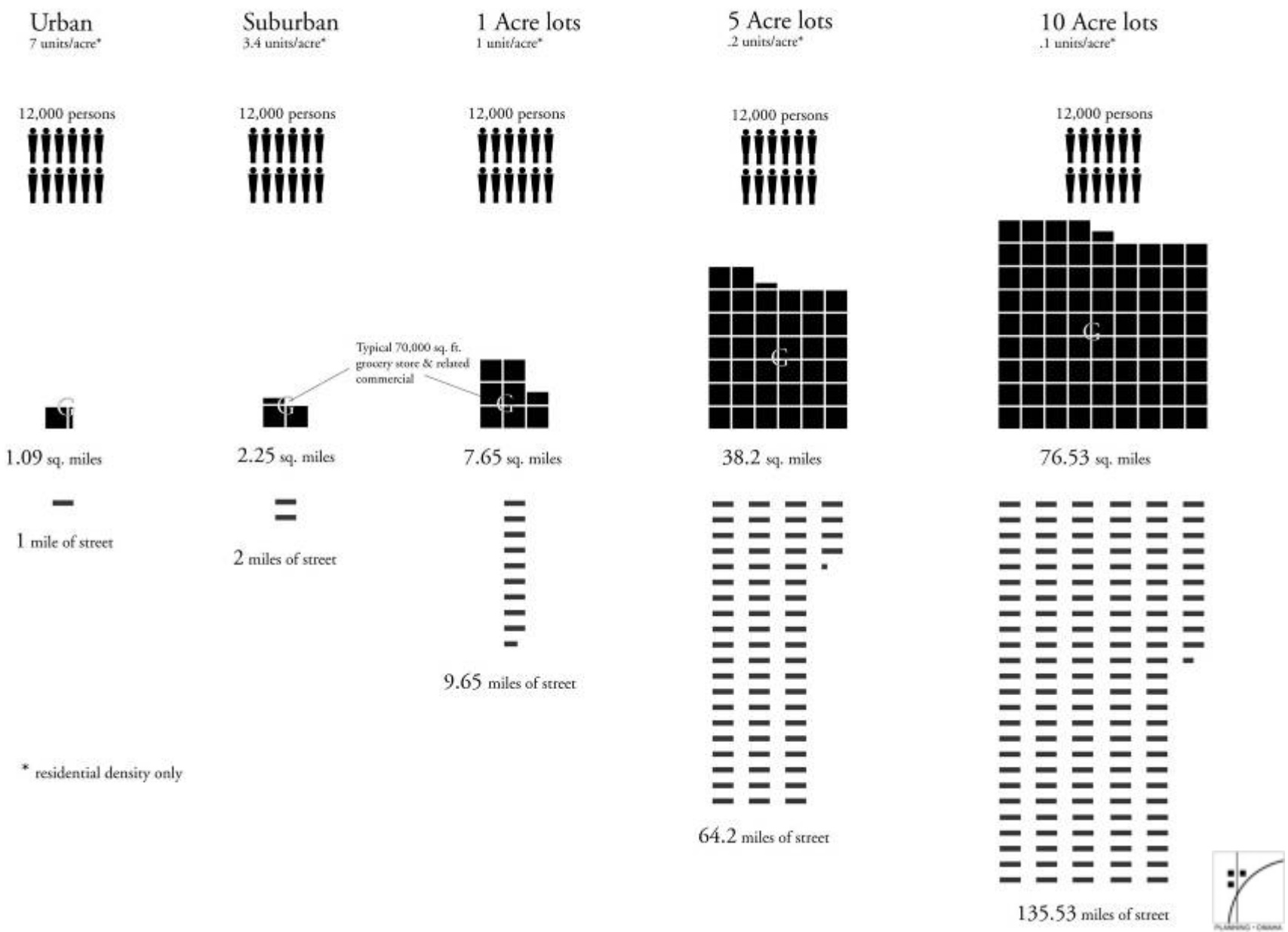
Current Trend



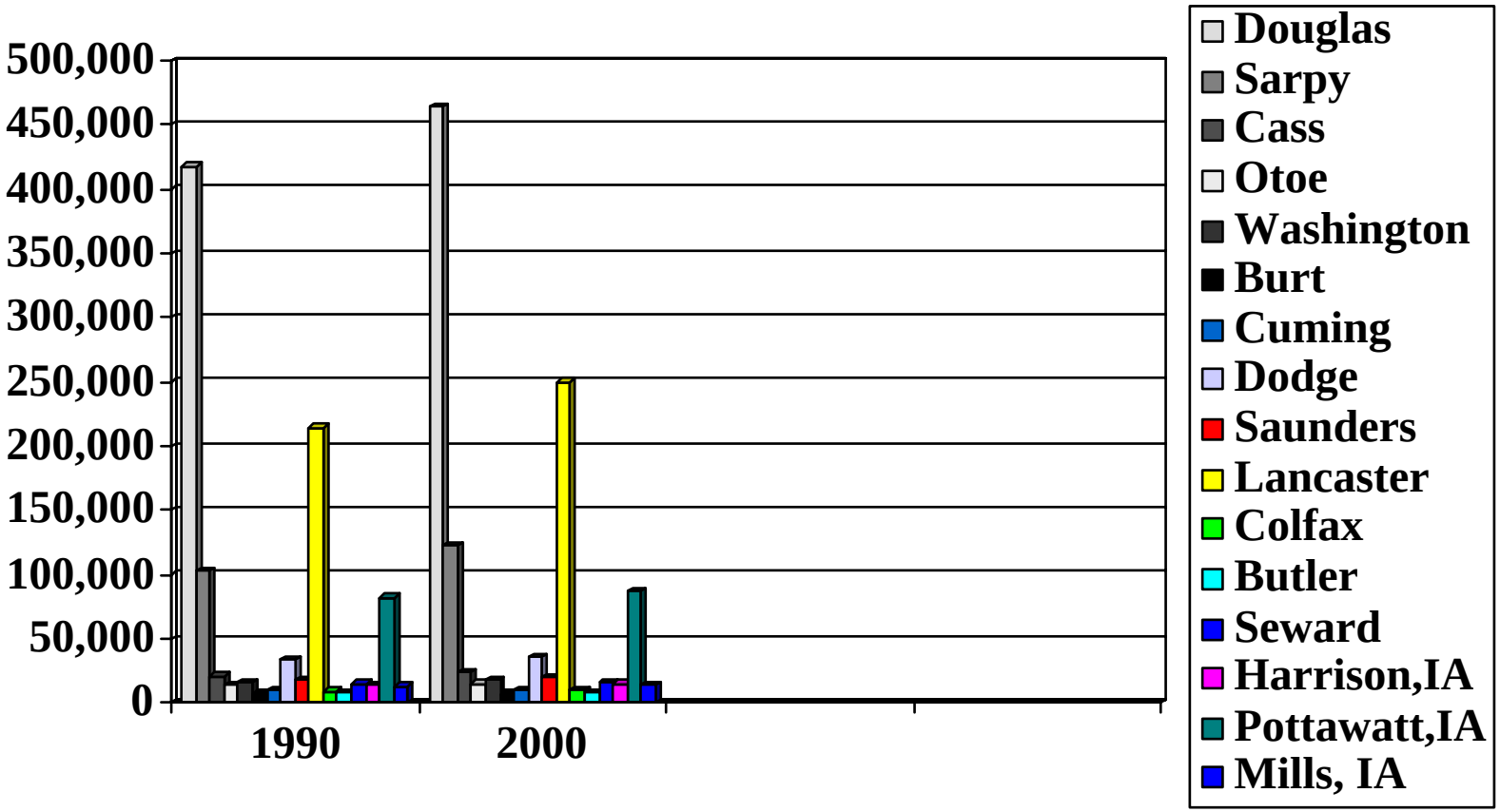
Current Trend-Roads



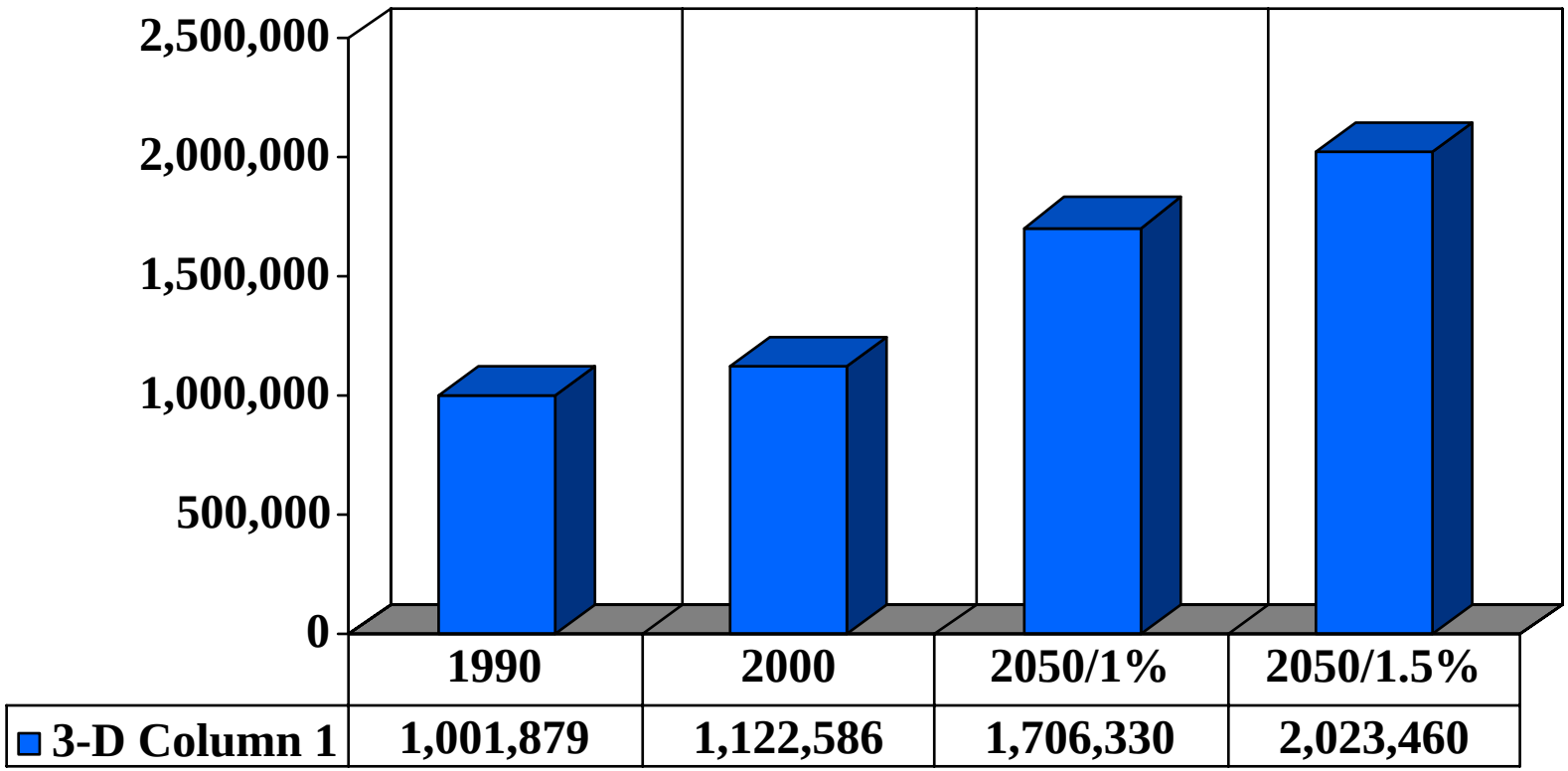
Land Consumption & Infrastructure Comparison

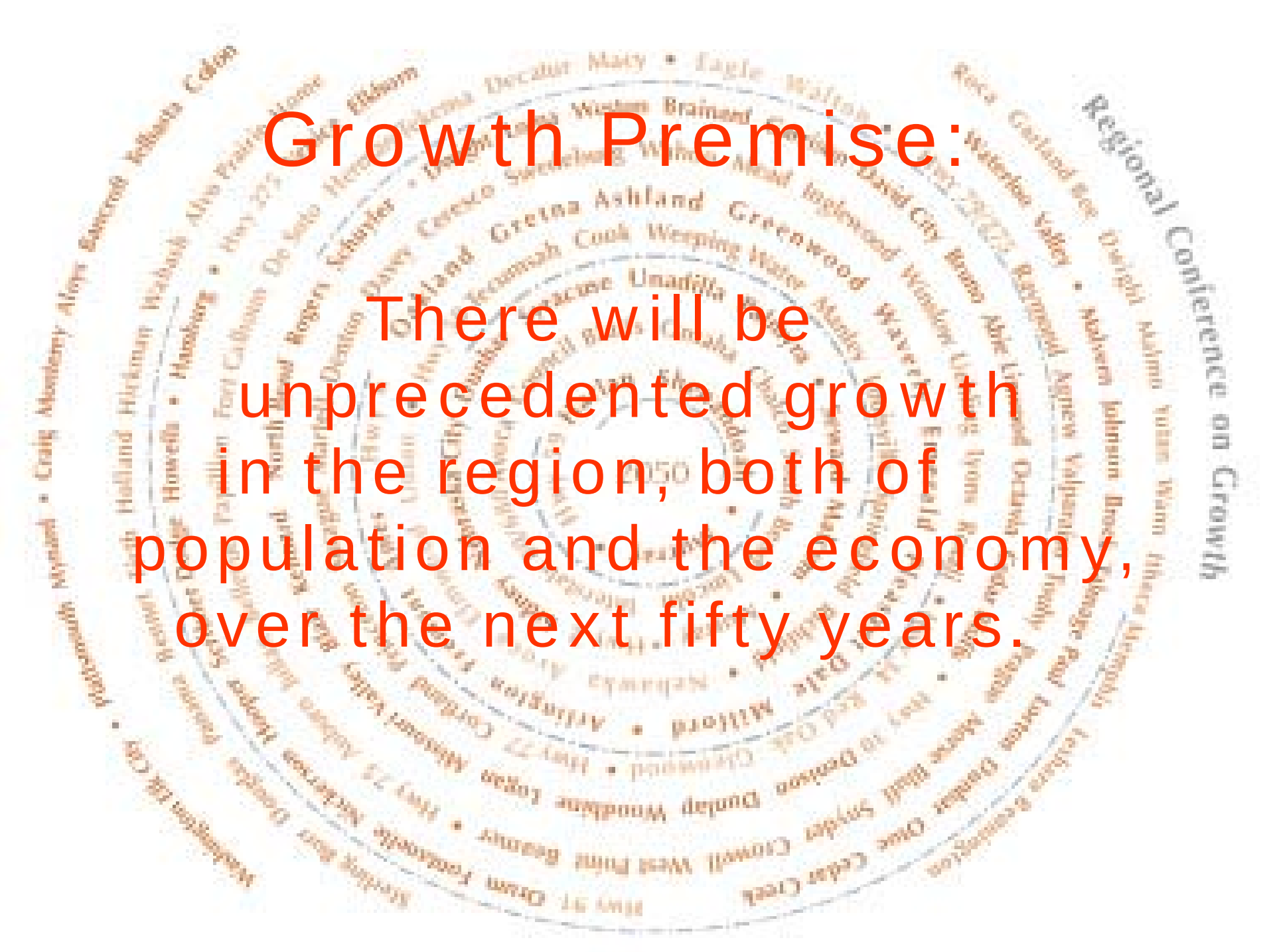


Southeast Nebraska/W. Iowa
60 mi radius of Omaha



Southeast Nebraska/W. Iowa Regional Population, 1990-2050





Growth Premise:

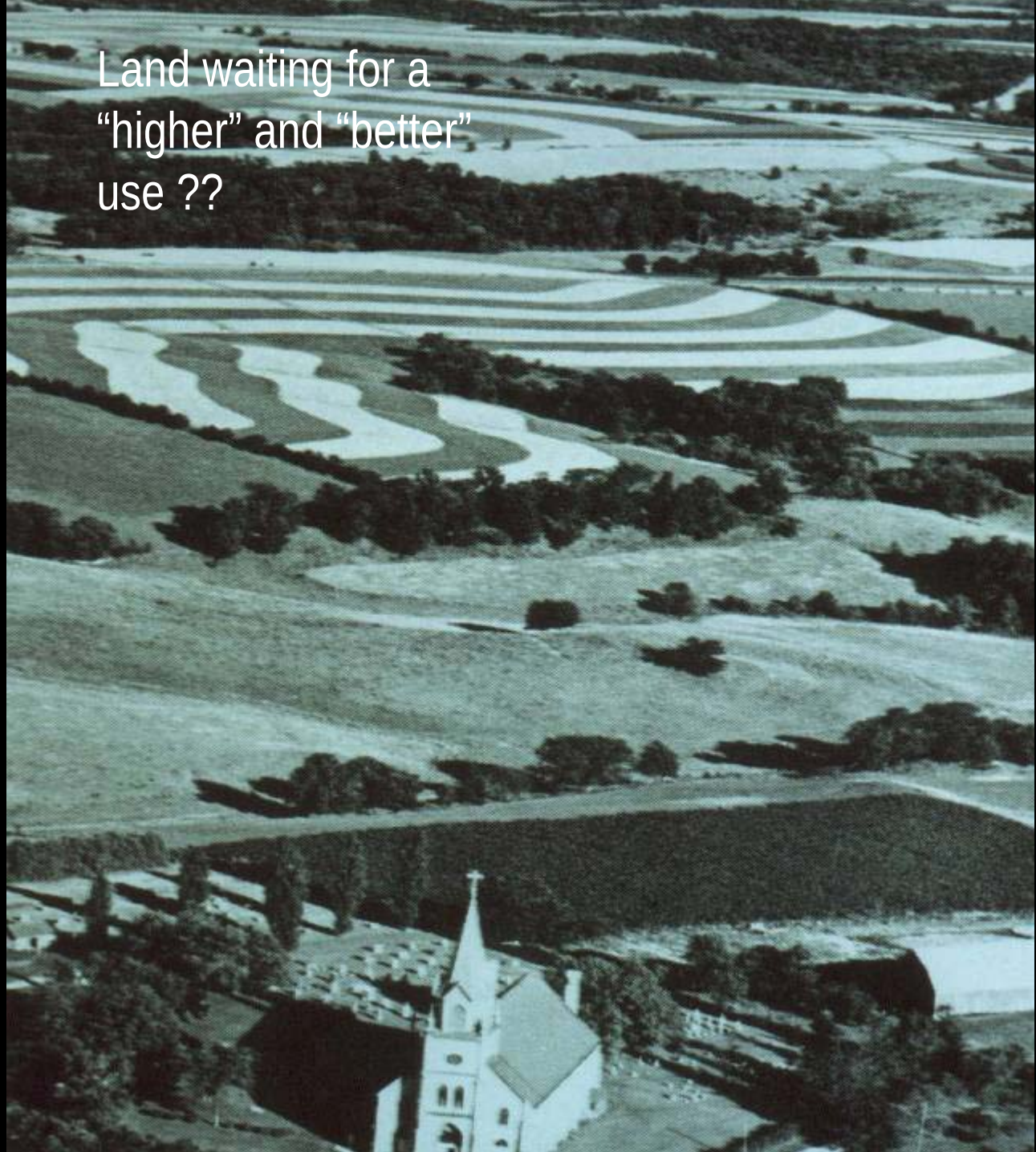
There will be unprecedented growth in the region, both of population and the economy, over the next fifty years.

Related Growth Premises: SE Nebraska/W. Iowa

- There are large and important ecological systems in the path of the projected growth; land uses are a major concern;
- There are serious economic consequences: to the State, the cities, the towns, commerce, industry, and agriculture;
- The projected growth will not occur without focused attention to the quality of the environment and people's lives;
- The region can compete (size, strategic location, economic resources, human resources, and natural assets);
- Water, wind, fertile soils, and a four-seasons solar climate are this region's most valuable natural resources;

Growth Premises (cont.)

- There is no shared vision of the preferred patterns of growth, or the policies related to land uses;
- Municipal and county governments have very different, often conflicting approaches to planning and public policies;
- Water resources are spotted and uneven in both quality and quantity;
- The infrastructure necessary to support growth is lagging behind growth pressures;
- Agricultural and urban/economic growth interests are in conflict;
- The region does not see itself as a unit of common economic interests; competitive tensions exist between communities.


Land waiting for a
“higher” and “better”
use ??

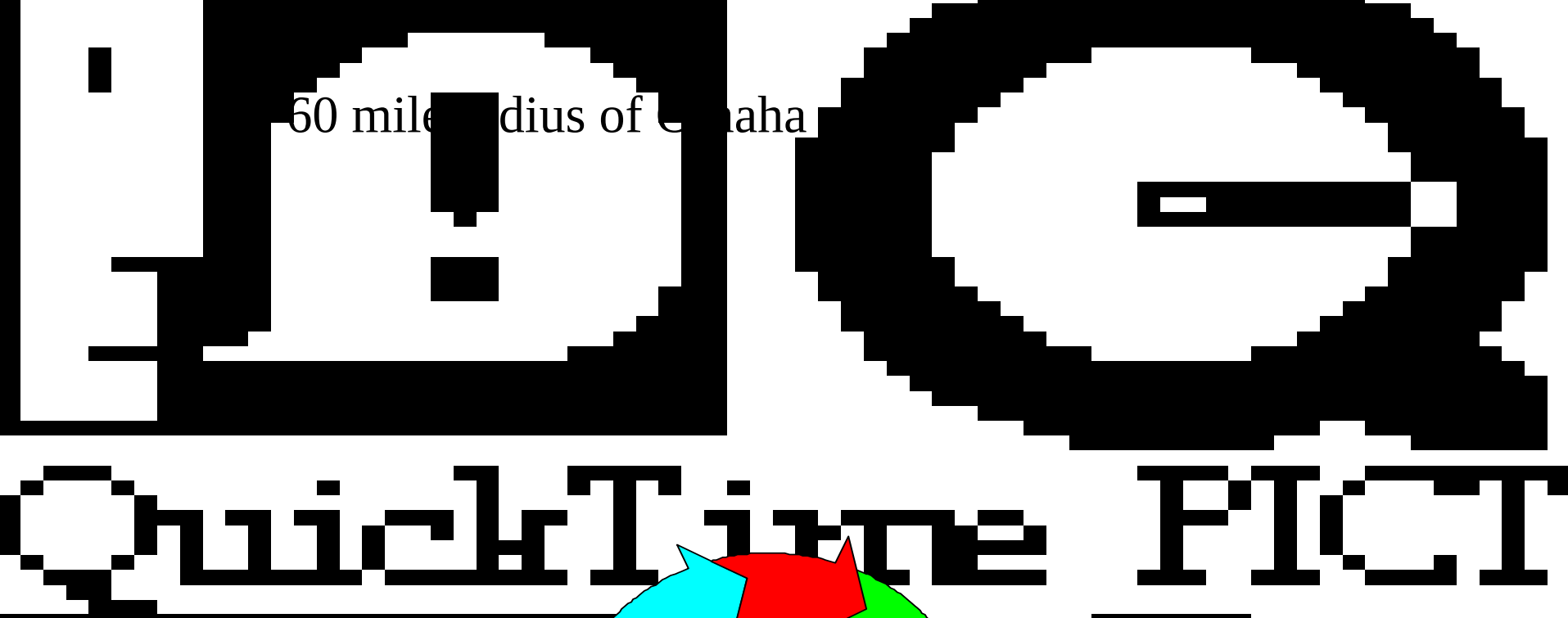
WATER

- quality, quantity & availability of ground water
- relationships between ground water and surface water
- impacts of changing meteorological conditions
- competition for potable water: jurisdictional disputes

Nebraska Gold (who gets it?)

- Southeast “Flatwater” Metro

60 mile[illegible]dius of [illegible]maha



60 m[illegible]

of Lincoln

Analysis of Comprehensive Plans

Flatwater Region

(Inconsistent Goals)

- A full range of housing choices/densities
- In-fill development (urban villages)
- Resident./commer./ retail walk'g distance
- Convenient, affordable transit
- Protection of flood plains/watersheds/ wetlands/native prairie
- Protection of natural resource/habitats
- Consistent strategies for regional transpor.
- Contiguous infra-structure planning
- Ag. land becomes a commodity/not farms
- No significant relationship between land/food/community

Analysis of Comprehensive Plans

Flatwater Region

(Inconsistent/absent Policies)

- Energy eff./alt. sources
- Acreage devel. (clusters, etc)
- Water conserv./shared sources
- School sites/planning
- Waste mgmt/recycling
- Budgeting of infrastructure
- Transportation/public transit
- Balanced devel/edge vs center
- Definitions/land-uses, limits
- Regional interact/interdepend.

"Each of us responds not to the world, but to our image of the world."

- *Barbara Tuchman*

Three Case Studies
Indicators of Sustainability

- Bay Area Indicators, California
- Central Texas Sustainability Indicators Project
- State of Minnesota Environmental Indicators Initiative

Bay Area Indicators

- Sustainable Economy
  (7 data sets)
- Housing
  (5 data sets)
- Transportation
  (2 data sets)
- Natural Assets
  (5 data sets)
- Resource Use
  (5 data sets)
- Educational System
  (2 data sets)
- Community Health and Safety
  (2 data sets)
- Local Government Finance
  (1 data set)
- Civic Engagement
  (2 data sets)

Central Texas Sustainability Indicators Project

- Public Safety
  (3 data sets)
- Education and Children
  (6 data sets)
- Opportunity
  (5 data sets)
- Civic Engagement
  (4 data sets)
- Economy
  (9 data sets)
- Health
  (3 data sets)
- Natural Environment
  (12 data sets)

Minnesota Environmental Indicators Initiative

(inter-relationships among ecosystem components: biological, chemical, physical)

- Human Activities
  (4 data sets)
- Environmental Condition
  (4 data sets)
- Societal Strategies
  (5 data sets)
- Benefits
  (4 data sets)

Natural Resources

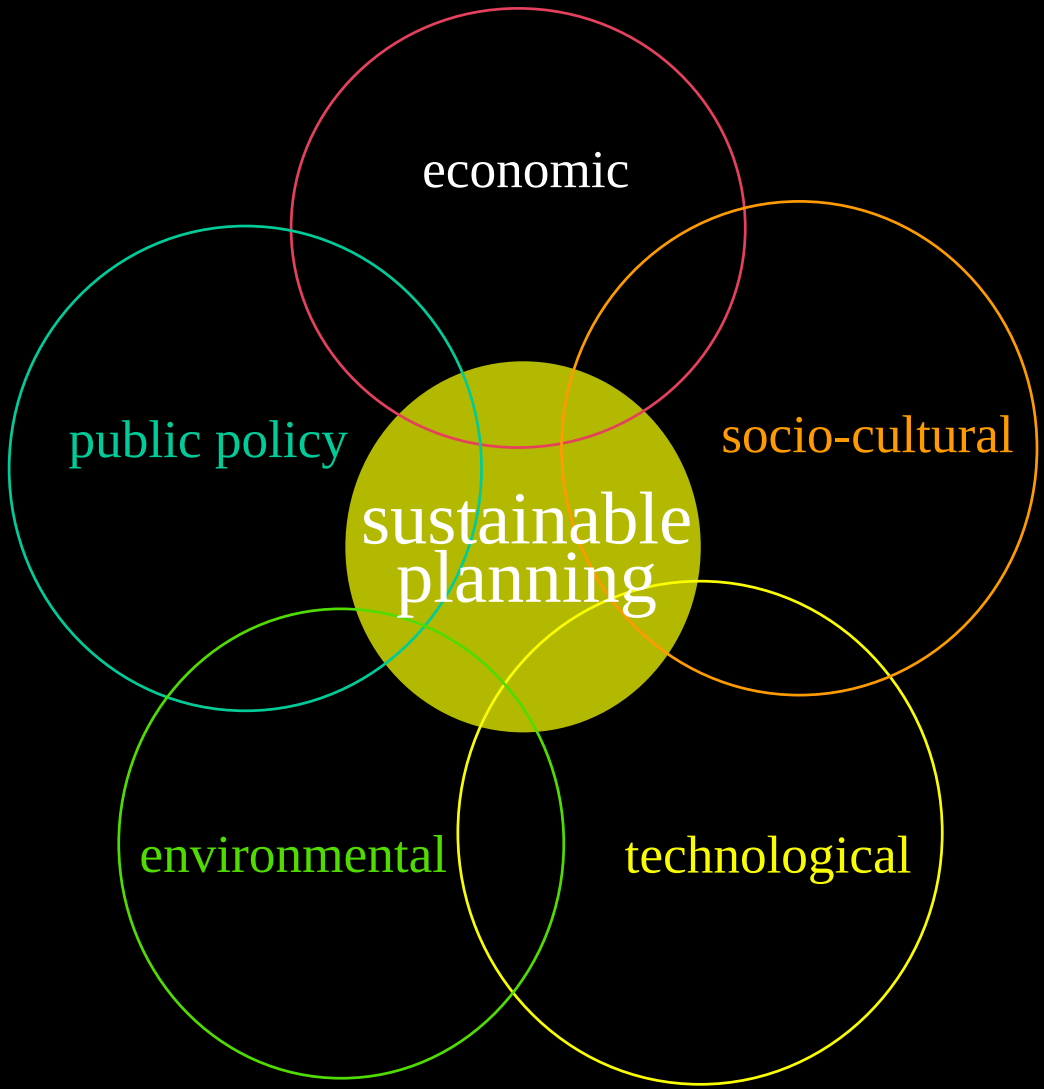
- Renewable Energy
- Quality and Quantity of Water
- Land
- Dependable Climate
- Nutrients

Human Resources

- Population/production resources
- Good health/safe environments
- Education
- Markets/distribution systems

FOOD

INFRASTRUCTURE



Five Domains of Sustainable Development (E/STEP)

KEY URBAN INDICATORS - Measures of Sustainability

I. Environmental:

- Access to potable water/change in pollution
- Rate of consumption of water
- Percentage of wastewater treated
- Air quality
- Solid waste generated
- Disposal methods for solid waste
- Volume of recycled material
- Housing/buildings destroyed
- Park land per capita and access/trails, greenspace
- Area of farm and open land used for development
- Land use

URBAN INDICATORS (cont.)

II. Socio-Cultural

- City Population (demographics)
- Growth (decline) rate
- Average household size/woman headed households
- Affordable housing deficiency (surplus)
- AIDS/other infectious diseases
- Number of hospital beds/medical staff
- Child mortality rates
- Welfare/unemployment rates
- School classrooms/at the edges, center
- Crime rates
- Ethnic populations/location/neighborhoods
- Housing density patterns

URBAN INDICATORS (cont.)

III. Technologies

- Energy sources
- Energy consumption rates
- Miles of roadway, type, surface, maintenance cycles
- Public modes of transportation
- Travel time and distance to employment
- Automobile ownership/annual sales
- Miles per ton of food and household essentials (energy)
- Household infrastructure connection levels
- Volume of recycled construction material used
- Digital connections/public access
- Airline transportation and passenger service

URBAN INDICATORS (cont.)

IV. Economics

- Household formation rate
- Income distribution
- City product per person
- Local/absentee business ownership
- Households below poverty line/median income
- Informal employment
- Urban/regional GDP
- Tax rates
- Public expenditures/infrastructure, services
- Imports/Exports
- Regional, national, international trading networks/value

URBAN INDICATORS (cont.)

V. Public Policies

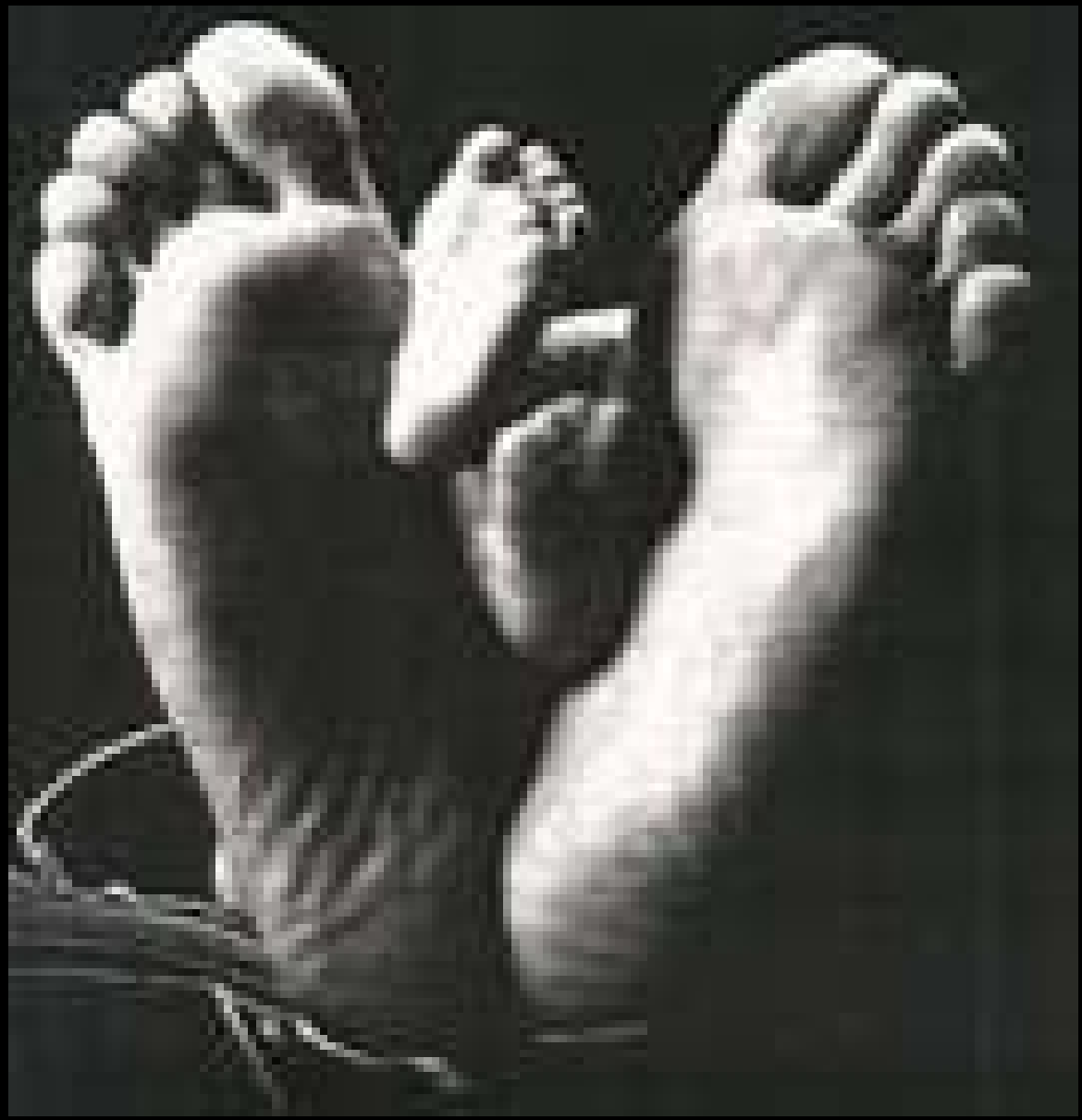
- Economic development
- Distribution of public funds/equity
- Public indebtedness/debt service budgeting
- Health, safety and welfare expenditures
- Growth management
- Environmental protection
- Transparent government
- Civic leadership development
- Public/private partnerships
- Use of sustainability indicators
- Visioning process/participatory planning

Sustainable Indicators Strategy

(adapted from UN/OECD/DAC Resource Book on Sustainable Development Strategies

- Establish a Coordinating Body
- Establish a Steering Committee
- Seek Political Commitment
- Secure Public Mandate
- Identify the Stakeholders
- Ensure Broad-based ownership
- Mobilize the Required Resources
- Seek Agreement on Stakeholder Roles
- Map Out a Strategy Process
- Establish SIS Ground Rules
- Establish a Calendar/Schedule
- Promote the SIS as a Unified Project
- Establish Provisions for Regular Reviews/Fora
- Establish Communication, Information, Knowledge Mgmt. Systems
- Establish Benefits, Recommendations Reporting
- Establish Monitoring, Accountability Mechanisms

THIS is our community



www.ecospheres.com

Joslyn Castle Institute

for sustainable communities